

# Graduate School of Global Information and Telecommunication Studies, Waseda University

## A summary of Doctoral Dissertation

The main title of Doctoral Dissertation

**DIGITAL DIVIDE IN MALAYSIA:  
EXAMINING THE ISSUES OF INCOME,  
WORKPLACE AND GEOGRAPHICAL DIFFERENCE IN  
DIFFUSING ICT TO THE MASS PUBLIC**  
所得、職場環境、地域格差がマレーシアにおける  
情報格差(デジタルディバイド)および  
情報通信技術の普及に与える影響に関する研究

Applicant's name

name

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Title of the project  
(Only applicants enrolled in GITS)

プロジェクト名  
(課程内のみ)

Global Information and Telecommunication Studies  
Info-Telecom Socio-Economics, Network Business  
and Policy Area

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## SUMMARY

Digital divide, the gap between those who have access to Information and Communication Technology (ICT) and those who do not, has become a major concern for Malaysia, as well as for many other developing countries, because it will further marginalize certain segments within the population, preventing them from benefiting from this technology. The existence of digital divide within the population can be easily found, with differences according to age, education, gender, geographical areas, income and workplace, creating social inequalities based on the individual's ability and use of ICT applications. From the economic perspective, digital divide will erode the nation's ability to compete with other countries that have superior ICT-based human resources and technical “know-how”, as most “value-added” products and services require the knowledge and use of ICT applications. Therefore, the use of ICT by the mass population is an imperative for the nation to achieve a knowledge-based society, leading to prosperity

This research is centered on the issue of digital divide. The analytical framework explores and examines, from the users' perspectives (the demand-side), factors that encourage the diffusion of ICT to the mass population. The focus has been upon how differences between geographical areas, income and workplace influence the individual in the use of ICT. These three dimensions are perceived to be the major influences upon the diffusion of ICT to the mass population. By using case studies and literature reviews, these three dimensions are proven empirically to have a significant effect contribution to the diffusion of ICT. Recommendations are also given based on the findings from the case studies on how to close the digital gap. This dissertation concludes by proposing sound public policy and programs, both in public or private sectors that are needed to overcome the digital divide, and suggesting future research that should be carried out at the macro level.

The dissertation is divided into eight (8) chapters:

### Chapter 1: Introduction

This chapter introduces the issues covered in this research. It includes an overview of the research, research questions and the significance of the study, the theoretical and operational framework for

this research, and the scope and organization of the research.

## Chapter 2: Literature Review

This chapter reviews the existing literature on diffusion of ICT, geographical effects on technology diffusion, and the issue of digital divide. The general principles and theories that are related to the diffusion of ICT and digital divide, as well as the previous studies that have been carried out in other countries related to these issues are the main focus of this chapter.

## Chapter 3: Overview of ICT Diffusion and Digital Divide in Malaysia

This chapter reviews the current status of ICT diffusion and the issue of digital divide in Malaysia. It includes an analysis of the secondary data available that supports the assumption of the existence of digital divide in the country. It also explains the involvement of the government through ICT programs planned and implemented to bridge the digital divide among the population. Finally, this chapter reviews some issues of digital divide and the perspectives of bridging the digital divide in Malaysia.

## Chapter 4: Methodology

This chapter explains the research methodology adopted, and includes the research design, modeling and analysis approaches used in this research. The hypotheses for the whole program of research are also presented in this chapter.

## Chapter 5: Factors that Influence the Diffusion of ICT to the Mass Population and a Comparison of Urban-Rural Differences in the Pattern of Diffusion

This chapter examines the factors that encourage the mass population to use ICT. It emphasizes the dimension of the differences in geographical area. The chapter presents a case study into diffusion of ICT by investigating how senior High School students in Kelantan, Malaysia use the Internet. The case study also investigates whether there exist a digital divide between urban and rural teenagers.

## Chapter 6: Factors in the Workplace that Influence the Diffusion of ICT

This chapter examines the issue of workplace (specifically the nature of job), in influencing the population to use ICT. A case study is presented, using the core urban service sector working population in Kuala Lumpur as the sample. The case study investigates how income factor, geographical effect and nature of job are influencing the urban working population to use ICT. The possible existence of a competency-based digital divide was investigated in the case study presented in this chapter.

## Chapter 7: Role of Income in the Diffusion of ICT in Urban and Rural Areas

This chapter focuses on how income influences the diffusion of ICT to the mass population, specifically between the urban and rural population. The chapter presents a case study on how urban and rural population perceived the value of using ICT by indicating their Willingness to Pay (WTP) for the service. The samples were from the public servants in Kelantan.

## Chapter 8: Conclusion

This chapter gives a summary of the results from analysis of the three case studies and literature survey, and provides concluding remarks based on the findings. The achievements of this research are also highlighted in this chapter and recommendations for future research in this area are also proposed.

## List of academic achievements

Type	*Title *Publication *Date of publication *Joint names
Article	<p>○ “ The Diffusion of ICT in Urban Malaysia: How Nature of Job Influencing the Usage of ICT among the Urban Working Population ” , published in the Studies in Regional Science Journal, Volume 34, Number 1, December 2004, Japan Section of Regional Science Association International, Tengku Mohamed Faziharudean and Hitoshi Mitomo</p> <p>○ “ Examining the Issue of Digital divide in Malaysia: Challenges in Closing the Digital Gap Based on Geographical Area and Income Factor ” , published in the INTAN Management Journal 2004 Publication, by the National Institute of Public Administration (INTAN), Tengku Mohamed Faziharudean and Hitoshi Mitomo</p> <p>○ “ Explaining Digital Divide as a Consequence of Uneven Digital Opportunities between Urban and Rural Areas: A Case of Internet Usage among Senior High School Students in Kelantan ” , published in the Studies in Regional Science Journal, Volume 33, Number 3, December 2003, Japan Section of Regional Science Association International, Tengku Mohamed Faziharudean and Hitoshi Mitomo</p>
Presentation at Academic Conference	<p>“ Digital Divide in Malaysia: The Value of Using the Internet by the Urban and Rural Population ” at the 41<sup>st</sup> Annual Meeting of the Japan Section of Regional Science Association International at Waseda University, 12<sup>th</sup> September, 2004, Tengku Mohamed Faziharudean</p> <p>“ The Existence of Digital Divide in Malaysia: How Skills and Nature of Job Contributing to the Digital Gap among the Urban Working Population ” at the 40<sup>th</sup> Annual Meeting of the Japan Section of Regional Science Association International at Ryukyu University, Okinawa, 2<sup>nd</sup> November, 2003, Tengku Mohamed Faziharudean</p> <p>“ Examining the Issue of Digital Divide in Malaysia ” at the 3<sup>rd</sup> ITU-Waseda Workshop for Policy Makers and Regulators at Waseda University, 31<sup>st</sup> October, 2003, Tengku Mohamed Faziharudean</p> <p>“ The Existence of Digital Divide in Urban Malaysia: What Factors Would Encourage the Urban Working Population to be Networked ” at the 18th Pacific Regional Science Conference and the 8<sup>th</sup> Annual Meetings of Regional Development in Acapulco, Mexico, July 2<sup>nd</sup>, 2003, Tengku Mohamed Faziharudean</p>

Type	*Title *Publication *Date of publication *Joint names
Presentation at Academic Conference	<p>“ Digital Divide as a Consequence of Uneven Digital Opportunities between Urban and Rural Areas: A Case of Internet Usage Among Teenagers in Malaysia ” at the 39<sup>th</sup> Annual Meeting of the Japan Section of Regional Science Association International in Sapporo, 5<sup>th</sup> October, 2002, Tengku Mohamed Faziharudean</p> <p>“ Bringing Internet to the Mass Public in Malaysia: A Study on the Factors that Influence the Usage of Internet by Senior High School Students in State of Kelantan, Malaysia ” at the Pacific Regional Science Conference and the 8<sup>th</sup> Annual Meetings of Regional Development in Bali, Indonesia, June 20<sup>th</sup>, 2002, Tengku Mohamed Faziharudean</p>
Internal Presentation	<p>“ Digital Divide in Malaysia: Examining the Issues of Income, Workplace and Geographical Differences in Diffusion of ICT to the Mass Public ” at the Preliminary Doctoral Dissertation Hearing for the Graduate School of Global Information &amp; Telecommunication Studies, Waseda University, 13<sup>th</sup> October, 2004, Tengku Mohamed Faziharudean</p> <p>“ The Existence of Digital divide in Malaysia: How to Bridge the Digital Gap by the Diffusion of ICT Irrespective of the Geographical Area ” at the Seminar for Doctoral Students of the Graduate School of Global Information &amp; Telecommunication Studies, Waseda University, July, 2003, Tengku Mohamed Faziharudean</p> <p>“ Digital Divide in Malaysia: Examining the Issues of Income, Workplace and Geographical Difference in Diffusing ICT to the Mass Public ” at the Seminar for Doctoral Students of the Graduate School of Global Information &amp; Telecommunication Studies, Waseda University, Waseda University, 13<sup>th</sup> October, 2004, Tengku Mohamed Faziharudean</p>
Discussant	<p>Paper presented at the 18th Pacific Regional Science Conference and the 8<sup>th</sup> Annual Meetings of Regional Development in Acapulco, Mexico, July 2<sup>nd</sup>, 2003</p>